



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,104	10/29/2003	Michael Pollock	90040-104774	6606
44200	7590	09/06/2006	EXAMINER	
HONIGMAN MILLER SCHWARTZ & COHN LLP 38500 WOODWARD AVENUE SUITE 100 BLOOMFIELD HILLS, MI 48304-5048			THOMAS, LUCY M	
			ART UNIT	PAPER NUMBER
			2836	

DATE MAILED: 09/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/696,104	POLLOCK ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	Lucy Thomas	2836

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 09 June 2006.

2a) This action is FINAL.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-20 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
Paper No(s)/Mail Date _____ .	6) <input type="checkbox"/> Other: _____ .

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 6-8, 12-14, and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goodman (US 6,088,210) in view of Nuckolls et al. (US 3,483,430). Regarding Claim 1, Goodman discloses an apparatus 10 (Figure 1, magnet protector) for protecting an energized inductive device, an industrial electromagnet from the effects of dissipating stored magnetic energy when supply voltage to the electromagnet is removed while the electromagnet is energized (open circuit), comprising: a diode D4, D5, D6, D9, D10 connected across terminals of the inductive device such that when the inductive device is normally energized, the diode is reverse biased. Goodman does not disclose a spark gap connected in series with the diode; and a housing enclosing the spark gap, the housing filled with an inert gas. Nuckolls disclose an apparatus (Figure 2) for an inductive load 7 comprising a spark gap 3 connected in series with a diode 9 and a housing enclosing the spark gap, the housing filled with inert gas (gas tube 3 is a spark gap enclosed by a housing filled with inert gas, Column 2, lines 32-34). It would have been obvious to one of ordinary skill in the art at the time of invention to modify Goodman's diode configuration (D4, D5, D6, D9, D10) connected across the terminals of the inductive device with a spark gap 3 in series with the diode (Goodman, D4, D5,

D6, D9, D10) and a housing enclosing the spark gap, the housing filled with inert gas as taught by Nuckolls because the spark gap prevents leakage current and a series diode acts as the current interrupter to deionize the gas tube, and the inert gas enclosed in the housing is ionizable to provide current flow through the gas tube.

Regarding Claim 2, Nuckolls discloses the apparatus, further comprising a resistance 5 in series with the diode and the spark gap. Regarding Claim 3, Nuckolls discloses the apparatus, wherein the resistance comprises at least one resistor 5. Regarding Claim 6, Goodman discloses the apparatus wherein the inductive device is an electromagnet. Regarding Claim 7, Nuckolls discloses the apparatus, further comprising a resistance 5 in series with the diode and the spark gap. Regarding Claim 8, Nuckolls discloses the apparatus, wherein the resistance comprises at least one resistor 5. Regarding method claims 12-14, 17-19, one would necessarily perform the recited method steps in the assembly of the apparatus rejected above.

3. Claims 4-5, 9-10, 11, 15-16, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goodman (US 6,088,210) in view of Nuckolls (US 3,483,430) and Czerlinski (US 4,520,249). Nuckolls fails to disclose a charge valve as recited in Claims 4 and 9, and a purge valve as recited in Claims 5 and 10, and an air pressure gauge as recited in Claim 11 for the spark gap housing. Czerlinski discloses a spark gap housing 10 with a charge valve 51 and purge valve 55, and an air pressure gauge 31. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the housing of Nuckolls with a charge valve, purge valve and air pressure gauge as taught by Czerlinski to maintain a controlled environment of inert gas in the housing for

ionization of the inert gas to provide current flow through the gas tube. Claims 15 and 20 recite a step of filling the spark gap housing with the inert gas using a charge valve extending into the housing. Claim 16 recites a step of extending a purge valve into the housing, the purge valve operable to allow at least one of venting and removal of the inert gas from the housing. Regarding these recited method steps, one would necessarily perform these steps in the assembly of the apparatus rejected above.

***Response to Arguments***

4. Applicant's arguments filed on 6/09/2006 have been fully considered.

Regarding Applicant's arguments toward the Nuckolls reference: The Applicant states that Nuckolls teaches only a non-inductive load. Examiner notes that Nuckolls discloses switching heavy inductive loads (Column 5, lines 47-49). Nuckolls also discloses that the spark gap device employed in the invention is similar in form to conventional glow lamps, but differs significantly from such conventional lamps (Column 3, lines 17-20).

Regarding Applicant's arguments about "spark gap": Spark gap disclosed by Nuckolls has two electrodes, and a dielectric/insulating medium (inert gas) between the electrodes breaks down during voltage surge. Examiner also notes that the Goodman reference discloses a diode connected across the magnet as recited in Claims 1 and 12, and teaches the use of spark gap surge arrester for magnet protection, and that this device consists of two sharply pointed electrodes connected across the magnet terminals (see Column 2, lines 12-21) as the Applicant argued on Page 5, lines 19-22 of

the Remarks. The Nuckolls reference is relied upon for teachings of a series connection of a diode and a spark gap, which would be obvious to those skilled in the art at the time the invention was made that Goodman may be combined with teachings to protect electromagnet devices with a spark gap because such a combination would protect the electromagnetic device where the spark gap prevents leakage current and a series diode which is reverse biased when the magnet is normally energized, acts as the current interrupter to deionize the gas, and the inert gas enclosed in the housing is ionizable to provide current flow through the gas tube.

***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lucy Thomas whose telephone number is 571-272-

6002. The examiner can normally be reached on Monday - Friday 8:00 AM - 4:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on 571-272-2800 x36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LT  
August 31, 2006



BURTON S. MULLINS  
PRIMARY EXAMINER